

4B100

1 of 2

MEMORANDUM



000064256

To: Pete Laurin, EG&G

From: Allen Crockett, The S.M. Stoller Corporation

Subject: Holding times for biota samples

Date: November 9, 1992

Re: MTS 2254405G

As you know, it has recently become apparent that the short holding times for mercury and PCBs specified by EPA for water and soil samples represent a problem for the OU 6 Environmental Evaluation. Actually, the basis of the problem is twofold. First, because biota samples are relatively difficult to obtain, it is sometimes impracticable to collect, accumulate, ship, process, screen, and analyze the appropriate biomass within such a small time period. Second, contaminants bound in plant or animal tissue are not subject to the same degradation rates, when frozen, as in reactive matrices such as water and, to a lesser extent, soil. The analytical protocols being employed by EG&G's contract laboratories for biota samples have holding times that are identical to those for water, even though these are not appropriate because of matrix differences.

I was RI manager for MK-Environmental Services at the Rocky Mountain Arsenal for 4½ years (October 1985 - May 1990). During that period, the various parties involved faced the same difficulties encountered by EG&G as part of its EE process. Holding times for biota were one of the key issues -- along with selecting sampling methods, target analytes, and target species -- addressed by the multi-party Biota Assessment Work Group (BAWG). In addition to myself, the BAWG consisted of Dr. Rod DeWeese of the U.S. Fish and Wildlife Service (USFWS), Dr. Doug Reagan of Environmental Science and Engineering (now with Woodward-Clyde), Dr. Marion Fischel of Shell, Dr. Jean Tate of EBASCO, Mr. Kevin Blose of the Rocky Mountain Arsenal Program Manager's Office, and representatives of EPA and their contractor CDM, CDH and their contractor GeoTrans, and the Colorado Division of Wildlife.

The BAWG committee worked with the USFWS and the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) to determine an appropriate holding time for biota. Target analytes included mercury and other metals, as well as chlorinated hydrocarbons. The result of that effort was a 2-year holding time for samples kept continuously frozen. USFWS researchers in Patuxent, Maryland, routinely publish reports using analytical data for samples held longer than that period, and because USFWS studies have shown no measurable effect on analytical results associated with that duration of storage.

ADMIN RECCO

A-DUOG-000572

1/2

I believe that EG&G should attempt to have the same holding time applied to biota samples at Rocky Flats. This would have two main benefits. First, it would provide greater flexibility in collecting, storing, and shipping biota samples. This would be especially important when vagaries of the season or tight deadlines require that sample collection precede analyte selection or laboratory availability. Second, it would allow EG&G to use samples already collected -- at considerable expense -- and maintained in a freezer onsite.

I recently contacted Rod DeWeese and Doug Reagan in an effort to obtain verification of the two-year holding time for biota agreed to by USFWS, EPA, CDH, and others at the Arsenal. As a result of those contacts, I telephoned Dr. John Moore of the Environmental Contaminants Branch, Patuxent Analytical Control Facility, U.S. Fish and Wildlife Service, Patuxent Wildlife Research Center, Laurel, Maryland. Dr. Moore was adamant that applying the "so-called" (his words) EPA holding times to frozen biota is inappropriate (his words were "scientifically ridiculous"). He stated that USFWS research has shown no decrease in concentrations of organochlorines or the most conservative metals (As, Se, Hg) in the most conservative tissues (blood and liver) for periods of up to 10 years. He feels (very strongly) that two years of storage below 0°C would be conservative for mercury and PCBs.

I therefore recommend that we ship samples from OU 6 as soon as the labs can accept them, even if we have exceeded the 28-day period. Obviously, the less we exceed the current holding times, the better. The samples will be flagged, but hopefully we can have the flags removed well before the data are received. For OU 5, we can perhaps use the samples collected last fall (well within 2 years) along with additional samples collected from the IHSSs this fall. This would allow us to meet the short holding times for the more critical (IHSS) samples.

I am in the process of obtaining documentation concerning the extended holding times for biota samples, especially method certification data provided to the Army by USFWS. I will keep you apprised.

cc: Bruce Bevirt, EG&G
 Ed Mast, EG&G
 Mark Lewis, Stoller

2/2